

A Reusable and Autonomous Ocean-Atmosphere Sensor Integration System (OASIS), Phase II

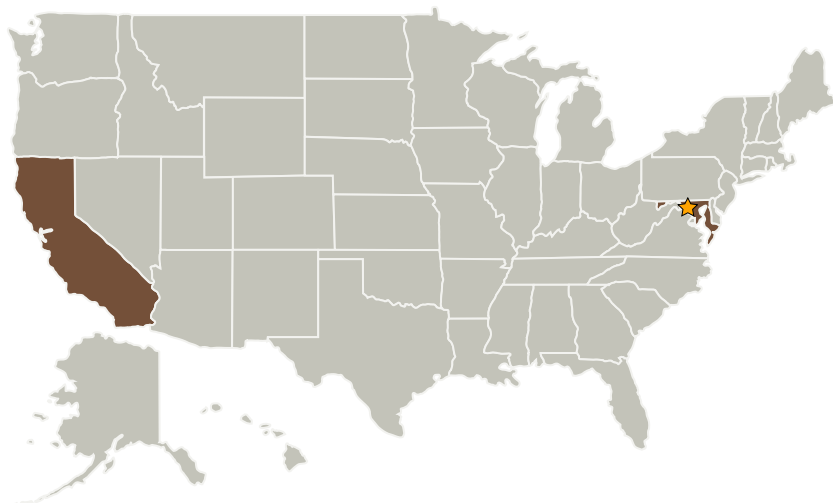
Completed Technology Project (2003 - 2005)



Project Introduction

The need to acquire observations on oceanic and atmospheric physical and biogeochemical processes continues to increase. These data are presently being used as initial conditions for model forecasts, for creating climatological fields, for calibration and validation of remotely sensed data, for model data assimilation, and for flux estimates. Presently, autonomous sensor platforms have been designed as low cost expendables and are capable of taking measurements of temperature, salinity, wind speed, and bio-optics. Recent advances in the development of in situ ocean sensors will shortly allow these autonomous sensors to also obtain measurements of pCO₂, nitrate, silicate, ammonium, and iron. However, as more sensors are included on the sensor package, the ability to use them as expendables is reduced dramatically. This proposal seeks to investigate the development and testing of a new low-cost sensor platform that would be capable of retrieval and reuse. The goal would be to develop a self-navigating, self-powered platform controlled via two-way satellite communication. This instrument platform could then be augmented with a wide variety of presently available oceanic and atmospheric sensors.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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| Organizations Performing Work | Role | Type | Location |
|------------------------------------|-------------------------|-------------|----------------------|
| ★Goddard Space Flight Center(GSFC) | Lead Organization | NASA Center | Greenbelt, Maryland |
| Pacific Gyre | Supporting Organization | Industry | Carlsbad, California |

| Primary U.S. Work Locations | |
|-----------------------------|----------|
| California | Maryland |

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Project Manager:

John R Moisan

Principal Investigator:

Andy Sybrandy

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
 - └ TX11.4 Information Processing
 - └ TX11.4.8 Edge Computing